

WHAT IS CLAIMED IS:

- Sub
AL
1. A smart browser module comprising:
an application layer interface coupled to a protocol stack, said application layer interface operative to receive at least one data packet comprising at least a portion of a target web page;
a user interface for interacting with a user;
a multilevel search control interface; *Adam's*
a multilevel object factory coupled to receive a first input relating to said target web page and a second input from said multilevel search control interface, said multilevel object factory operative to specify a remote object agent that orchestrates a multilevel browser operation based upon said first and second inputs, whereby said remote object agent is exported from said web browser to execute on a network server external from said smart browser. *25/45-26/62*
2. The browser of Claim 1, wherein said user interface comprises a window display providing an interactive menu to a user. *in line 2, included*
3. The browser of Claim 2, wherein said user window is a part of a windows based graphical user interface.
4. The browser of Claim 1, where said user interface comprises a voice interface. *obvious*
5. The browser of Claim 1, wherein said multilevel browser operation corresponds to a multilevel "find in page" operation. *page 25/60-65*
- 09702422, 663466

1 6. A multilevel-search browser plug-in module for coupling to a host
2 browser, whereby the host browser comprises a markup language parser, and a user
3 interface for coupling to a user, and an application layer communications interface, said
4 application layer interface operative to receive at least one data packet comprising at least
5 a portion of a target web page the plug-in module comprising:

6 a multilevel search control interface;

7 a multilevel object factory coupled to receive a first input relating to said target
8 web page and a second input from said multilevel search control interface, said multilevel
9 object factory operative to specify a remote object agent that orchestrates a multilevel
10 browser operation based upon said first and second inputs, whereby said remote object
11 agent is exported from said web browser to execute on a network server external from
12 said smart browser.

1 7. The plug-in module of Claim 6, wherein said plug-in module is embodied
2 as Java™ code. *obvious*

1 8. The plug-in module of Claim 6, wherein said plug-in module is embodied
2 as executable XML code.

1 9. For use in a client browser, a method comprising the steps of:
2 obtaining application data from an application layer interface;
3 passing said information to a user via a user interface;
4 coupling a multilevel-search interface signal to a user;
5 accepting a parameter set via said multilevel-search interface, said parameter set
6 comprising least one parameter defining a multilevel browser operation;
7 generating a remote agent object for execution on a remote network server,
8 whereby said remote agent object orchestrates the following acts:

9 (i) accessing a first markup language document and scanning said
10 document to determine a hyperlink contained therein;

11 (ii) activating said hyperlink found in said step of accessing;

12 (iii) retrieving at least a portion of a second markup document
13 associated with said hyperlink; and

14 (iv) comparing the contents of said at least a portion of said second
15 markup document to at least a portion of said set parameter set.

1 10. The method of Claim 9, whereby said remote agent object further
2 orchestrates the following act:

3 comparing the contents of at least a portion of said first markup document to at
4 least a portion of said set parameter set.

1 11. The method of Claim 9, wherein said parameter set includes a character
2 string and an indication of the number of levels to search.

1 12. The method of Claim 9, wherein said parameter set includes a Boolean
2 keyword expression and an indication of the number of levels to search.

1 13. The method of Claim 9, wherein said client browser is hosted within a
2 wireless mobile device and said parameter set includes information derived from an
3 electronic positioning system.

1 14. The method of Claim 9, whereby said remote agent object further
2 orchestrates the following act:

3 evaluating the results of the comparison and when said step of comparing reveals
4 a match, coupling information related thereto to the user, and when said step of
5 comparing does not yield a match, checking to see if the search is complete, and if it is
6 not, accessing a next hyperlink and repeating the steps of activating, retrieving, and
7 comparing, and evaluating.

1 15. The method of Claim 9, wherein said step of evaluating further comprises
2 the steps of:

3 when said information has been coupled to said user, awaiting a find-next signal,
4 and when said find-next signal is received, checking to see if the search is complete, and
5 if it is not, accessing a next hyperlink and repeating the steps of activating, retrieving, and
6 comparing, and evaluating.

1 16. The method of Claim 9, wherein said parameter set includes a boolean
2 keyword expression, an indication of the number of levels to search, and an indication to
3 continue the search on a designated-next-linked page.

1 17. The method of Claim 9, wherein said hyperlink points to a metadata
2 description of a web resource and said step of accessing involves accessing a file
3 containing metadata relating to said resource.

1 18. The method of Claim 9, wherein said second markup document comprises
2 a metadata description, said metadata description being described using a resource
3 description framework (RDF) based language.

1 19. In an intelligent client, a method of seeking information in an information
2 network, the method comprising the steps of:

3 accessing a web page via said network connection using a client-server
4 transaction;

5 presenting said web page to a user;

6 receiving a set of one or more multilevel search parameters to define a multilevel
7 browsing operation over a graph of hyperlinks reachable from said web page in N hops,
8 where N is a positive integer;

9 specifying in said intelligent client a remote agent object, said remote agent object
10 operative to orchestrate the implementation of said multilevel browsing operation from a
11 remote network node;

12 dispatching said remote agent object to a remote server for execution;

13 whereby said remote agent object causes said multilevel browser function to be
14 performed at least partially in said remote server.

1 20. The method of Claim 19, wherein remote agent object is represented as
2 Java bytecodes, executes at least partially in an agent sandbox, and uses a remote method
3 invocation based distributed object protocol to communicate with said intelligent client.